Universal Trail Assessment Process (UTAP)
&
High Efficiency Trail Assessment Process (HETAP)

Coordinator Workshop

American Trails
Ensuring Trails for Our Future
25 YEARS

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Introductions

Name

Where are you from

Who do you work for/represent

Why UTAP Interest

What do you hope to gain

Workshop Goals

Know the development of UTAP and HETAP (High Efficiency Trail Assessment Process)

Understand UTAP concepts, benefits and measurement techniques

Workshop Goals

Use UTAP and HETAP for diverse environments and objectives

Obtain practical experience

Perform and lead assessments

Workshop Topics

Morning

Introductions & Overview

Tool Function

Measurements

Application of UTAP/HETAP

Afternoon

On-Trail Practical

Data Analysis & Use

Debrief, Review & Questions

Certification Process

Greatest Barrier to Outdoor Facility and Trail Use

- Lack of knowledge about actual on-site conditions or about where access is possible

Need for Trail Assessment

All users and land managers need accurate trail data

Objective trail information is very limited, but it enables informed decisions about trail use and conservation

Subjective information is not related to individual abilities

Trail Assessment Options

Universal Trail Assessment Process (UTAP)

High Efficiency Trail Assessment Process (HETAP)

UTAP & HETAP Generate Objective Information

- Access and Use
- Construction and Maintenance
- Mapping and Interpretation
- Environmental Protection and Management
- Compliance with Design Standards

Assessment and Compliance

- Inventory existing facilities and infrastructure – Asset Management
- Determine compliance with existing ABA for Developed Outdoor Recreation facilities
- Create transition plan with goals and objectives for accomplishing access

Universal Design

Philosophy that designs for all potential users to the greatest extent possible

Principles include:

- equitable use
- flexible use
- simple & intuitive use
- perceptible information
- tolerance for error
- low physical effort
- size and space for approach and use

UTAP Research & Development

Project of Beneficial Designs, Inc.

Funded by the National Center for Medical Rehabilitation Research in the National Institute of Child Health and Human Development at the National Institutes of Health SBIR Grant #R44 HD29992-03

UTAP Development Partners

Bureau of Land Management (DOI)

Bureau of Reclamation (DOI)

National Park Service (DOI)

US Army Corps of Engineers

US Fish & Wildlife Service (DOI)

US Forest Service (USDA)

UTAP Development Partners

American Trails

California State Parks

Minnesota Department of Natural Resources

National Center on Accessibility

Wilderness Inquiry

Key Variables for UTAP

- Measured many trail factors
- Matched objective variables with user expectations and experience
- Matched objective variables with trail experts and their knowledge of trail

Relation to User Perceptions

- Users of all abilities view trail information before hiking
- Expectations prior to trail use
- Experience after trail use

UTAP Research Results

- Identify key variables
- Validity
- Repeatability
- Relation to user perceptions

Validity of UTAP/HETAP

- Measure & record in 2 foot intervals
- Calculate trail access information
- Expert review of information accuracy
- Typical grade & cross slopes within 1%

Repeatability of UTAP/HETAP

- Same UTAP leader, different days
- Same UTAP leader, different years
- Different UTAP leader, same day
- All comparisons were repeatable except washouts or landslides
- Storm damage recorded as features and maximum cross slopes

UTAP Tools

What types of information do you display for your trail?

Key UTAP & HETAP Information

Length

Grade

Width

Surface

Cross slope

Features & Facilities

HETAP and UTAP is suitable for any trail or path of travel in an outdoor environment.

What are different types of trails?

Shared Use Path

Urban Shared Use Paths

Neighborhood Connector Trails

Recreation Trail (Front Country)

State Parks/ Day Use Areas/ Interpretive Trails

Front Country Trails

Recreation Trail (Back Country)

Narrow Trails

Backcountry single track trails

Cross Country Trails

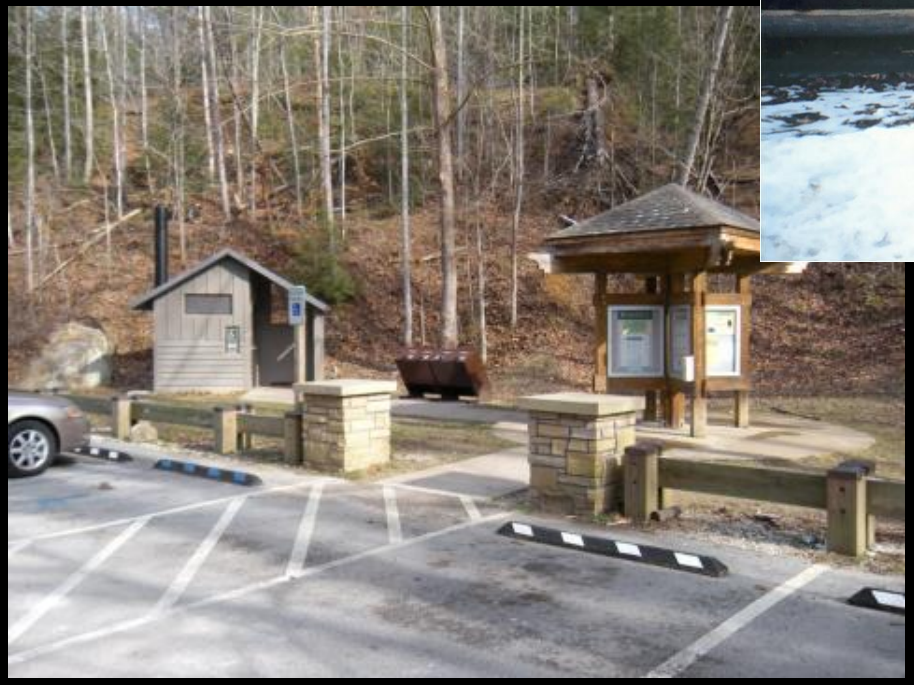
Snowshoe Trails

Snowmobile Trails

Mountain Bike Trails

Motorized Trails

Outdoor Recreation Access Route (ORAR)



Paths of Travel at Recreation Facilities

UTAP Records Typical and Extreme Values

- Grade
- Cross Slope
- Width

Trail	Grade (%) Typ	Grade (%) Max	Cross Slope (%) Typ	Cross Slope (%) Max
Kersey Lake	5	70	11	32
Indiana Falls	8	10	16	19

Surface

Firmness Category

Surface Type

Features and Facilities

- Location
- Type
- Description
- Dimensions
- Quantity

Feature Example

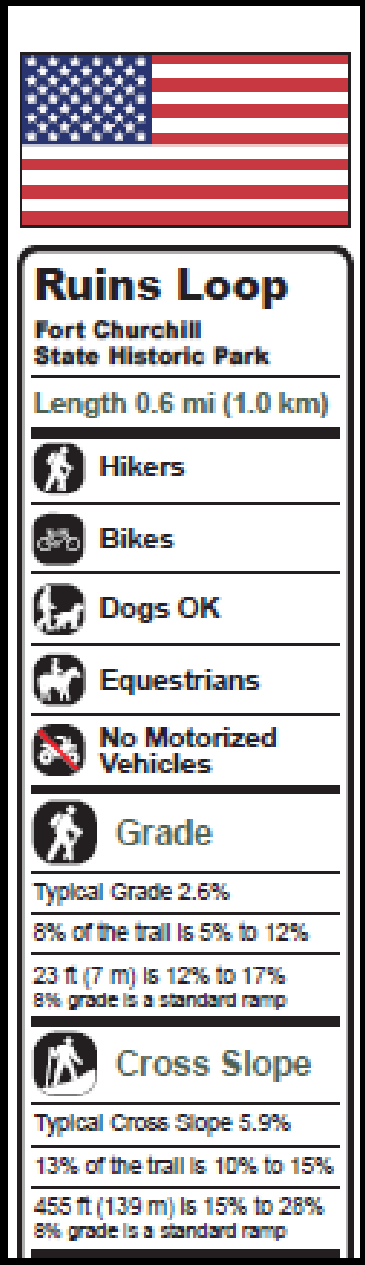
Scenic Viewpoint

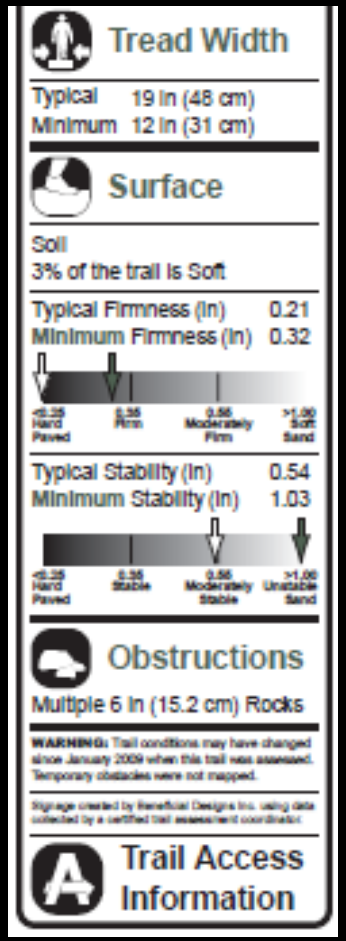
Feature Examples

Feature	Dist	Zone	Size	Rem.
Rock	50	TB	11x23x7	48
Rock	60	TB	10x23x6	17
Rock	70	VF	11x22x8	n/a
Rock	5020	TB	12x22x7	12

Trail Access Information (TAI) to Convey to Users

- Grade
- Cross Slope
- Tread Width
- Surface
- Obstructions

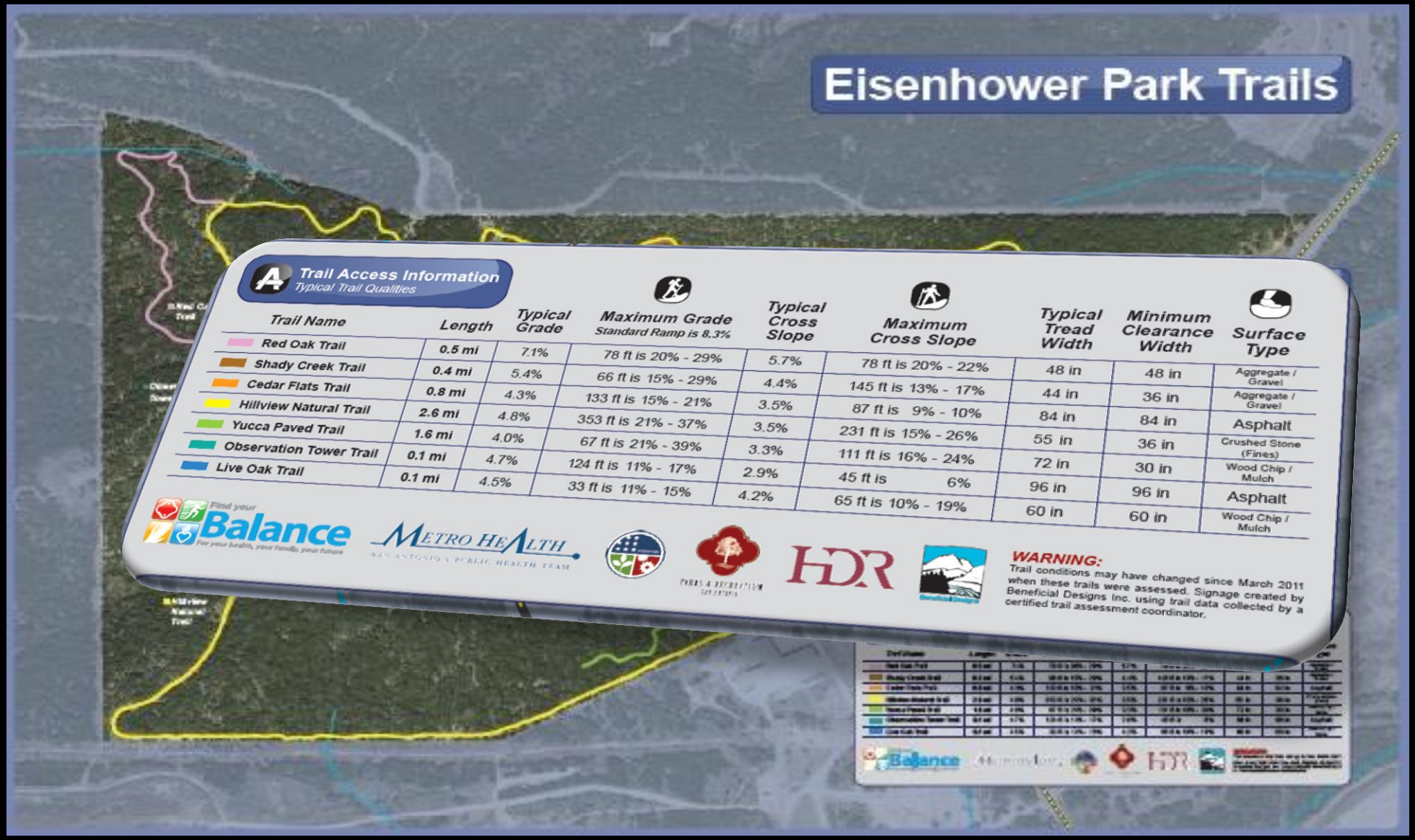




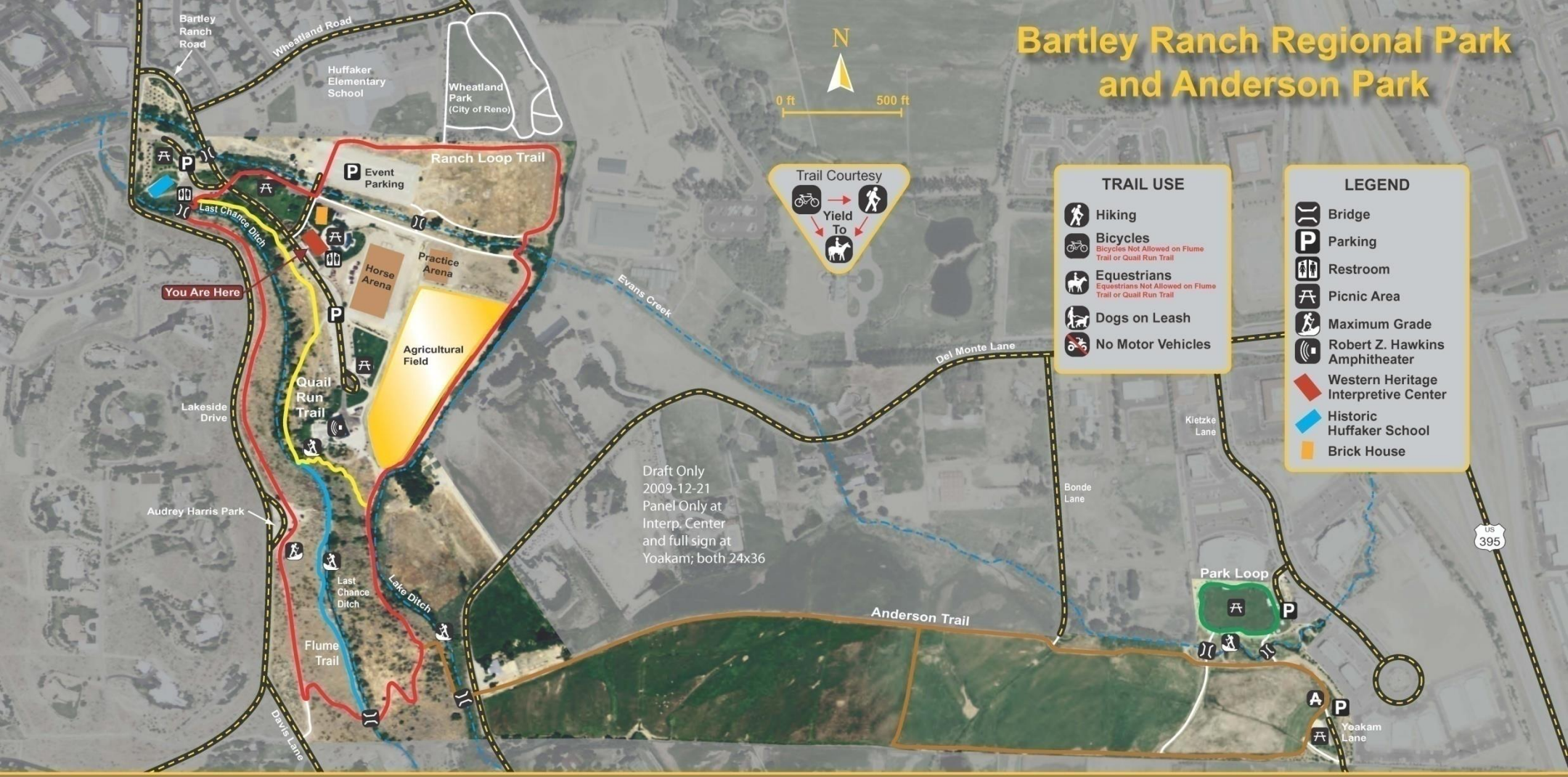

Dune Trek
Hikers
Bikes
Dogs on Leash
Equestrians
No Motorized Vehicles
Grade
Cross Slope
Tread Width
Surface
Trail Access Information


RIVERVIEW
PARK
TRAIL
Riverview Park / Mexican Ditch Trail System
Trail Use:


Eisenhower Park Trails
North
LEGEND
Bridge
Parking
Restroom
Park Entrance
Drinking Water
Shelter/Pavilion
River/Creek
Road
Balance


Eisenhower Park Trails
Trail Access Information
Typical Trail Qualities
Trail Name | Length | Typical Grade | Maximum Grade Standard Ramp is 8.3% | Typical Cross Slope | Maximum Cross Slope | Typical Tread Width | Minimum Clearance Width | Surface Type
Red Oak Trail | 0.5 mi | 7.1% | 78 ft is 20% - 29% | 5.7% | 78 ft is 20% - 22% | 48 in | 48 in | Aggregate / Gravel
Shady Creek Trail | 0.4 mi | 5.4% | 66 ft is 15% - 29% | 4.4% | 145 ft is 13% - 17% | 44 in | 36 in | Aggregate / Gravel
Cedar Flats Trail | 0.8 mi | 4.3% | 133 ft is 15% - 21% | 3.5% | 87 ft is 9% - 10% | 84 in | 84 in | Asphalt
Hillview Natural Trail | 2.6 mi | 4.8% | 353 ft is 21% - 37% | 3.5% | 231 ft is 15% - 26% | 55 in | 36 in | Crushed Stone (Fines)
Yucca Paved Trail | 1.6 mi | 4.0% | 67 ft is 21% - 39% | 3.3% | 111 ft is 16% - 24% | 72 in | 30 in | Wood Chip / Mulch
Observation Tower Trail | 0.1 mi | 4.7% | 124 ft is 11% - 17% | 2.9% | 45 ft is 6% | 96 in | 96 in | Asphalt
Live Oak Trail | 0.1 mi | 4.5% | 33 ft is 11% - 15% | 4.2% | 65 ft is 10% - 19% | 60 in | 60 in | Wood Chip / Mulch
Find your Balance
METRO HEALTH
HDR
WARNING:
Trail conditions may have changed since March 2011 when these trails were assessed. Signage created by Beneficial Designs Inc. using trail data collected by a certified trail assessment coordinator.

Bartley Ranch Regional Park and Anderson Park



Trail Name	Length	Typical Grade	Maximum Grade	Typical Cross Slope	Maximum Cross Slope	Typical Trail Width	Minimum Clearance Width	Surface Type	Surface Firmness Typical	Surface Firmness Worst	Surface Stability Typical	Surface Stability Worst
Ranch Loop Trail	1.5 mi	4.5%	371 ft is 16% – 25%	2.8%	18 ft is 16% – 20%	90 in	40 in	Aggregate/Gravel	0.19	0.22	0.36	0.60
Quail Run Trail	0.4 mi	7.3%	186 ft is 20% – 40%	3.5%	46 ft is 18% – 30%	60 in	25 in	Aggregate/Gravel	0.19	0.22	0.39	0.50
Flume Trail	0.2 mi	4.6%	37 ft is 14% – 19%	3.9%	47 ft is 12% – 14%	48 in	20 in	Soil	0.23	0.25	0.38	0.49
Anderson Trail (Round Trip)	1.7 mi	2.5%	196 ft is 14% – 21%	2.4%	311 ft is 7% – 11%	76 in	48 in	Aggregate/Gravel	0.19	0.22	0.39	0.52
Park Loop	0.2 mi	1.6%	64 ft is 4% – 5%	1.8%	230 ft is 3% – 4%	84 in	84 in	Aggregate/Gravel	0.18	0.19	0.37	0.43

Surface Firmness (in)

<0.25 Hard Paved | 0.35 Firm | 0.55 Moderately Firm | >1.00 Soft Sand

Surface Stability (in)

<0.25 Hard Paved | 0.35 Stable | 0.55 Moderately Stable | >1.00 Unstable Sand

Funded by the Nevada Recreational Trails Program

WARNING: Trail conditions may have changed since September 2009 when these trails were assessed. Secondary trails are shown in white.
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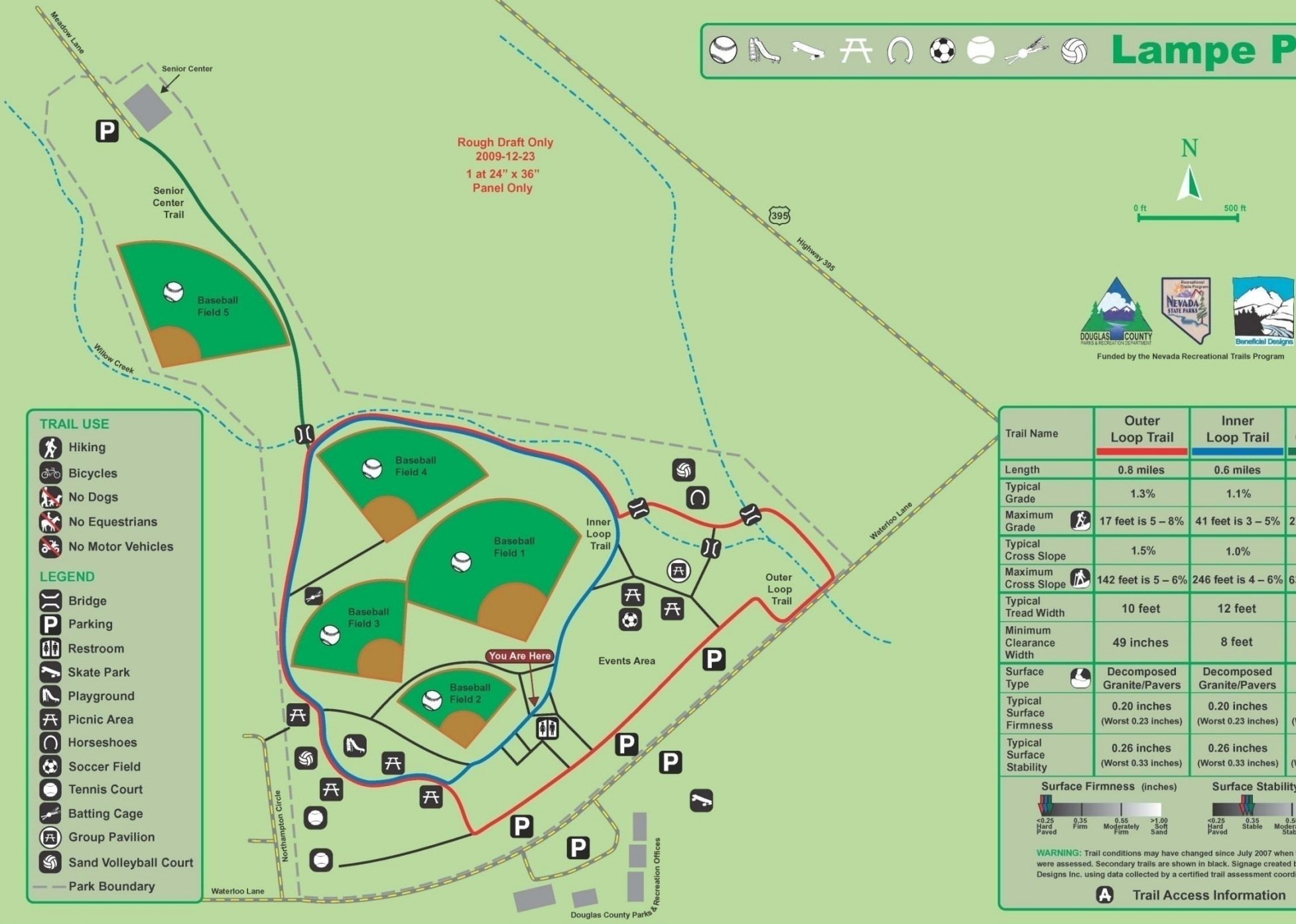
A Trail Access Information

Lampe Park



TRAIL USE

- Hiking
- Bicycles
- No Dogs
- No Equestrians
- No Motor Vehicles

LEGEND

- Bridge
- Parking
- Restroom
- Skate Park
- Playground
- Picnic Area
- Horseshoes
- Soccer Field
- Tennis Court
- Batting Cage
- Group Pavilion
- Sand Volleyball Court
- Park Boundary

Trail Name	Outer Loop Trail	Inner Loop Trail	Senior Center Trail
Length	0.8 miles	0.6 miles	0.2 miles
Typical Grade	1.3%	1.1%	1.5%
Maximum Grade	17 feet is 5 – 8%	41 feet is 3 – 5%	27 feet is 5 – 6%
Typical Cross Slope	1.5%	1.0%	1.1%
Maximum Cross Slope	142 feet is 5 – 6%	246 feet is 4 – 6%	63 feet is 3 – 5%
Typical Tread Width	10 feet	12 feet	9 feet
Minimum Clearance Width	49 inches	8 feet	7 feet
Surface Type	Decomposed Granite/Pavers	Decomposed Granite/Pavers	Decomposed Granite
Typical Surface Firmness	0.20 inches (Worst 0.23 inches)	0.20 inches (Worst 0.23 inches)	0.19 inches (Worst 0.23 inches)
Typical Surface Stability	0.26 inches (Worst 0.33 inches)	0.26 inches (Worst 0.33 inches)	0.28 inches (Worst 0.33 inches)

Surface Firmness (inches)

<0.25 Hard Paved | 0.35 Firm | 0.55 Moderately Firm | >1.00 Soft Sand

Surface Stability (inches)

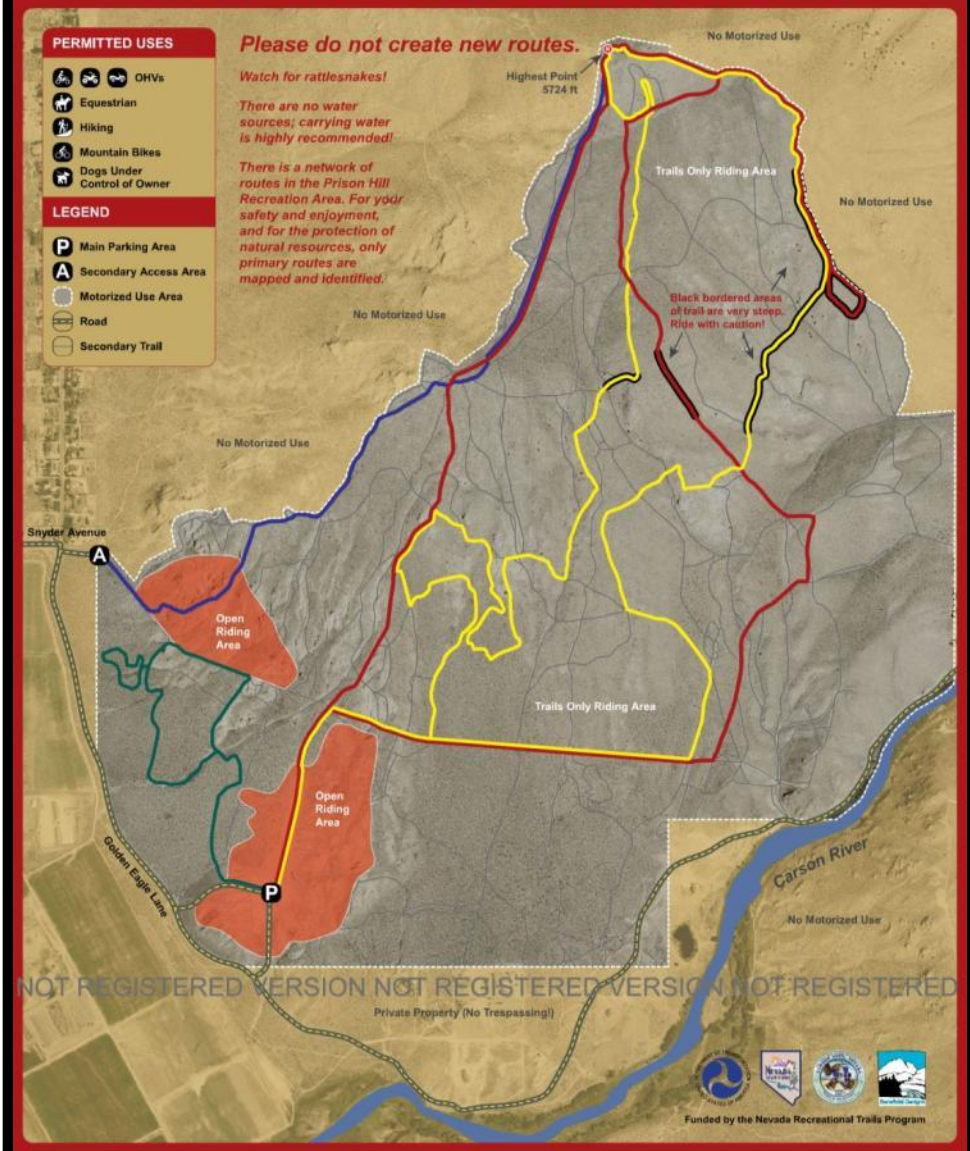
<0.25 Hard Paved | 0.35 Stable | 0.55 Moderately Stable | >1.00 Unstable Sand

WARNING: Trail conditions may have changed since July 2007 when these trails were assessed. Secondary trails are shown in black. Signage created by Beneficial Designs Inc. using data collected by a certified trail assessment coordinator.

A Trail Access Information

CARSON CITY

PRISON HILL RECREATION AREA · MOTORIZED USE AREA



TRAIL ACCESS INFORMATION

Vehicle Use	Length	Typical Grade	Maximum Grade (Standard Ramp is 8.3%)	Typical Cross Slope	Maximum Cross Slope	Typical Tread Width	Minimum Clearance Width	Surface Type
Motorcycle Loop	6.0 mi	12.6%	182 ft is 45% - 65%	4.8%	49 ft is 20% - 34%	5.3 ft	1.2 ft	Sand / Soil
Motorcycle/ATV Loop	1.6 mi	7.9%	38 ft is 40% - 51%	5.3%	78 ft is 15% - 21%	5.6 ft	4.0 ft	Sand / Soil
Motorcycle Trail	1.6 mi	12.5%	278 ft is 25% - 42%	5.8%	684 ft is 13% - 23%	6.4 ft	5.0 ft	Sand / Soil
Motorcycle/ATV/Jeep Loop	5.5 mi	10.9%	149 ft is 35% - 37%	4.2%	83 ft is 15% - 16%	6.6 ft	7.1 ft	Sand / Soil

WARNING: Trail conditions may have changed since September 2013 when these trails were assessed. Signage created by Beneficial Designs Inc. using trail data collected by a certified trail assessment coordinator.

North

0 mi 0.25 mi

PERMITTED USES
OHVs
Equestrian
Hiking
Mountain Bikes
Dogs Under Control of Owner
LEGEND
Main Parking Area
Secondary Access Area
Motorized Use Area
Road
Secondary Trail

TRAIL ACCESS INFORMATION

Vehicle Use	Length	Typical Grade	Maximum Grade (Standard Ramp is 8.3%)	Typical Cross Slope
Motorcycle Loop	6.0 mi	12.6%	182 ft is 45% - 65%	4.8%
Motorcycle/ATV Loop	1.6 mi	7.9%	38 ft is 40% - 51%	5.3%
Motorcycle Trail	1.6 mi	12.5%	278 ft is 25% - 42%	5.8%
Motorcycle/ATV/Jeep Loop	5.5 mi	10.9%	149 ft is 35% - 37%	4.2%

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Internet

www.trailexplorer.org

Who benefits from objective Trail Access Information (TAI)?

People with Disabilities

Users with limited experience

Everyone benefits from TAI!

Children

Adults who are older or less fit

User Benefits from TAI

- Consistent information
- Increased independence, safety, opportunities and enjoyment
- Responsible and informed trail selection
- Knowledge of actual conditions

Land Manager Benefits

- Increased user safety and satisfaction
- Provide more trail opportunities
- Monitoring of environmental impact

Land Manager Benefits

- Identification of work priorities
- Enhanced planning & budgeting of projects
- Enhanced search and rescue
- Provides information for GIS (When use GPS)

Assessment and Compliance

- Inventory existing facilities and infrastructure
- Determine compliance with existing ADAAG and Developed Outdoor Recreation facilities
- Create transition plan with goals and objectives for accomplishing access

UTAP/HETAP Trail Assessment Coordinators

- Over 1,050 individuals trained
- Federal, state and local trail management agencies
- US, Canada, and other countries

HETAP in Use

Over 20 Units in Service

- Florida State Parks
- Cities of Edmonton, Alberta and Toronto, Ontario
- National Parks Service – Saguaro National Park Golden Gate NRA
- City of San Antonio, TX
- City of Phoenix, AZ
- City of Palo Alto, CA
- Monterey Peninsula Regional Park District
- ADA Consultants of IN
- Nā Ala Hele - State of Hawaii Trail and Access Program

Overview Summary

- Lack of information is the greatest barrier to access
- UTAP/HETAP is objective, valid, repeatable and related to user perceptions
- Generates and conveys all types of information for all types of trails
- Benefits all users and land managers
- Focuses on grade, cross slope, surface, width and features
- Generates a complete inventory for Asset Management

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Working toward universal access
through research, design & education